CSUN-UCLA Bridges to Stem Cell Research

Grant Award Details

CSUN-UCLA Bridges to Stem Cell Research

Grant Type: Bridges

Grant Number: TB1-01183

Project Objective: This grant implements a training program for biology students enrolled at CSU Northridge by providing stem cell laboratory coursework and hands-on research opportunities. The program is open to 10 students per year, recruited as senior undergraduate or Master's students. Internships are conducted at UCLA stem cell labs for 1 year (graduate) or 9 months (undergraduate) in duration. Students who graduate from the program are poised to enter the stem cell work force but typically choose to pursue Ph.Ds or MDs.

Investigator:

Name:	Cindy Malone
Institution:	Cal State Univ, Northridge
Type:	PI

Award Value: $3,814,078

Status: Closed

Grant Application Details

Application Title: Bridges to Stem Cell Research

Public Abstract:

The Bridges to Stem Cell Research Training Program will provide a practical laboratory training experience in stem cell biology with integrated educational seminars and mentored guidance for highly qualified and culturally diverse senior undergraduate and Master's level students. Our internship-host institution provides mentors who are world-leaders in stem cell research. There is a great scientific variety of available hands-on training environments in embryonic, induced pluripotent, and adult stem cell biology, spanning the basic to translational investigative spectrum. Our partnership achieves the major Bridges Program objectives including: 1) training laboratory personnel in current stem cell research techniques, policies, and ethics, and 2) facilitating the entry of an ethnically and culturally diverse student population into the emerging world of stem cell biology and regenerative medicine. Ten Bridges trainees will study the latest advances in stem cell biology and will present their own work in a setting in which they can obtain constructive feedback. They will interact with their peers in formal and informal forums and will meet leaders in the field. Bridges internships will be 1 year in duration for graduate students and 9 months for undergraduate students and will take place in screened and selected internship-host labs. The vast majority of intern time will be spent on laboratory research. Working with faculty, researchers, and staff technicians, Bridges interns will be taught stem cell and essential analysis techniques such as microscopy, cell sorting, and good laboratory practices (GLP) in the internship-host lab and affiliated cores. This hands-on experience will be supplemented by participation in a biweekly Stem Cell Journal Club, a weekly stem cell seminar series, a yearly International Stem Cell Symposium, and by informal mentoring by host-institution faculty who have an active role in the student's education by functioning as advisor, teacher, and collaborator during the internship program. A key component is trainee mentoring that is designed to not only provide a supportive environment for learning and discovery, but to monitor and evaluate a trainee's progress through the program at both the home and internship-host institution. Our inter-institutional training program will provide an opportunity for engaged, interested, and successful trainees to gain the necessary skills and qualifications to springboard into careers in stem cell research that span the spectrum, from basic studies to translational approaches, in academia and industry. The home institution has a long history of successfully preparing underrepresented minority students for doctoral study in science and technology. This program is expected to build on this track record by contributing significantly to the number of minority students preparing for careers in stem cell biology and regenerative medicine.

Statement of Benefit to California:

The Bridges to Stem Cell Research Program will train students in world-leading host institution labs for technical positions in stem cell research in academia and industry. Interns will come from a culturally and ethnically diverse applicant pool, increasing underrepresented groups engaged in stem cell research. The grantee institution was recently ranked among the top five by the NSF for MS degree holders to earn a subsequent PhD degree, which likely will add to the diversity of stem cell teachers and researchers at California institutions. Our training program will also provide scientists and technical staff for California's biotechnology, pharmaceutical, and stem cell companies, whose success will propel hiring and increased economic prosperity for the state. The host institution supports a scientific enterprise of $900M+ in extramural funding (2007) with ~$46M in CIRM grants and is one of the largest State employers with economic activity generating $1.2B annually in taxes. Each dollar of taxpayer investment generates almost $15 in economic activity. The grantee institution also generates $900M+ million for the regional economy. This impact sustains more than 13,500 jobs and generates $57M per year in tax revenue. CIRM trainees will have a tangible health and economic impact for California, its academic institutions and biotechnology, pharmaceutical, and stem cell companies, and the rest of the nation as California and its citizens move forward with personalized medicine during the 21st century.
